cated an error in one of the marks first made on the radiated paper; and that was then proved to be an error, by placing the paper again on the cast, and then correcting it. The measures on this scale, some time ago, I transferred from a centre to sixteen radiating lines; and, on turning over some papers and seeing it, I considered that, without going to the "British Museum," I could make *one* comparison. I therefore placed the "pentagraph weight" in the centre, and adjusted my temporary apparatus to it; and it has thus become the *first*, and a most powerful, evidence of the great probability that this is the identical method used by the ancient Greeks. Indeed, nothing but the most inveterate prejudice could blind the eyes of any person who would give the least attention to the subject.

The particular adjustments of the apparatus also clearly indicate that the ancient architects worked by rule: the adjustments for the apparatus in this case being, in their proportions to each other, as 2, 6, and 12,—each being a little more than so many English inches.

The application of forms produced by varying motion was not "problematical" to the "ancient Greeks," whatever it may appear to be to Mr. Cockerell,—who by such imaginations, has perhaps contributed to prevent such simple facts being known.

The spiral lines now produced have in their general character, when compared by scales of radii, a similar appearance to the variation in the lines which I had previously supposed, from that circumstance, and from the equal simplicity of motion, to have been the Greek spiral; although no one, to my knowledge, has attempted to disprove the correctness of such a supposition, and it may yet be found to be a variety, but in this instance it must give way to this *new (doubtless very old)* character of motion; and the variation of adjustments which this motion admits of, furnishes such strong presumptive evidence that it has been the *origin of all scrollwork*; and this will not appear the less obvious when it is known and seen, that by the most simple variation in the adjustment, every variety of "*inflected* lines," —"*lines of beauty*" for connecting the two scrolls at the ends of a map,—whether equal or unequal,—can be obtained.

I had ascertained how to produce these "*lines of beauty*" about a year ago, although I had not an apparatus to draw one complete on this principle. I should be ashamed of saying this, if this simple principle of motion had not also escaped the observation of, as far as I know, all others, even mathematicians.

Professor Willis has not included it in his attempt at classification of motions. Nothing is more easy than to build up complicated apparatus, or to hide, to common observers, imperfections in form, by colour and ornament; while experience daily proves that the most simple principles, which, when known, require no demonstration to make them obvious, have not been so easily discovered.

Upon the whole, I am not sorry that the present race of architects, and especially the professors, have looked upon my endeavours with so much prejudice and indifference—perhaps I may say absolute contempt—although they have been incapable of offering anything as a substitute.

Had it been otherwise, and had they given just so much attention to my discoveries, as to understand the subject, they might then, before me, have discovered some of the most important and interesting adjustments in the septenary system, which I had hitherto passed over. This, however, they have not done, and Mr. Cockerell may long look at the object in the wall—"*a fossil of beautiful spiral outline*,"—before he discovers a simple practical method equal to "*those refinements which marked the smallest productions of the Grecian chisel, testimonies of the science of the Greek architects*," for producing true lines in the actual execution of a volute, with the facility the apparatus now before me is capable of. To incur the cost, however trifling, of getting an apparatus made to work very accurately, would be a risk that the invention would be at once copied; and it would be the same if even the temporary apparatus was applied, for additional proof, to a volute in the British Museum.

All, therefore, that I can do is to draw a few lines, and to exhibit an example of a volute, drawn with the temporary apparatus, at the Polytechnic Institution, and invite architects to look at them, and to invite all to ask architects the question,—whether they can produce as correct a specimen by simple continuous varying motion, either for volutes or entasis, and what they really know of the septenary system?

JOSEPH JOPLING.

NOTES IN THE PROVINCES.

THE Fitzwilliam Museum at Cambridge is now open to all respectably-attired persons on Wednesdays and Saturdays, from twelve till four o'clock.——A new chapel has been opened at Prickwillow, Ely. It is built on a site near the bridge on the Dark river, and is of flint, with stone and brick dressings and slate roof. ——The restoration and repair of the chancel of the old church at Soham have commenced, on plans by Messrs. Bonomi and Cory, of Durham. Carved oak stalls will run round the two sides; the floor will be relaid with encaustic tiles. The repewing of the whole body of the church is thought desirable.—— The repairs and restoration of Melton Mowbray Church by the contractors, Messrs. Broadbent and Hawley, of Leicester, are in progress. The large window on the west side of the church is to be repaired, it is said, and replaced with new stained glass.——A tomb of Caen stone, representing a railway arch or tunnel, surmounted by embattled towers or lanterns, has been built in the parish church of Otley, in memory of the thirty-four unfortunate workmen killed at the Bramhope tunnel during the progress of the Leeds and Thirsk Railway works.——The harbour of Lowestoft has now cost 177,385*l.*, and when completed will cost about 200,000*l.* It is capable of containing 200 vessels, independently of the outer basin. At its entrance at low water there is a depth of 19 feet 6 inches. The dues for last year amounted to 3,954*l.*, and the present are 60*l.* per week higher than the average of the past year.——The Bristol council have commenced rebuilding the landing-pier of Portishead; Messrs. Charles Emett and John Gay, contractors: plans by Mr. Joseph D. Green, engineer to the Bristol Docks, under whose direction the works are now in progress.——The Albion Chapel, Southampton, was opened on Wednesday week. It is 80 feet in length, 50 feet in width, and 32 feet 6 inches in height from floor to ceiling. The entire cost is between 5,000*l.* and 6,000*l.* Mr. W. Hinves, of Southampton, was the architect, and Mr. T. A. Gates the builder: plasterer, Mr. C. Scorey. The building is described as "a structure in the Ionic order of classic architecture." The front is of white brick, with columns, &c., faced in Portland cement. A flight of stone steps ranges the entire length of the front, and the whole is inclosed by an iron railing from the street. ——The Brighton Commissioners, with reference to the projected sale of the Pavilion, &c., have passed a resolution that it would be highly injurious to the town of Brighton to suffer the lawn and pleasure-grounds to be built over.——The first stone of a church, to be built at Wickham Bishops, was laid on Friday in last week. It is in the perpendicular style: cost, when finished, about 3,800*l.* The church is the gift of a lady,—Mrs. Lee, of Wickham Bishops, Essex. Mr. Christian is the architect.——Fifty acres of Wimbledon Common, it is said, are to be enclosed, and an establishment for pauper children, from the Surrey Union, erected there.——St. Peter's Church, Canterbury, according to the *Dover Chronicle*, is about to be placed under a process of restoration, which it much requires. The plaster covering the flint is being cleared off, and the work fresh pointed.——The Rochester-bridge wardens have resolved on the erection of a new bridge forthwith. The plan is not yet determined.——A temporary church, in the form of a spacious tent, to hold between two and three hundred persons, has been erected in Datchet-lane, Windsor, under the Castle walls, for the families of labourers engaged in forming the branch railway to the Great Western, at Slough, and the continuation of the Richmond line from Datchet.—— The Macclesfield baths and washhouses for the working classes have been formally opened. ——On Monday week the Bishop of Manchester laid the first stone of Christ Church, Friesland, near Ashton. The edifice is to be in the early English style, from a design by Mr. G. Shaw, of Upper Mill, Saddleworth, to accommodate 500 persons, and to consist of a chancel, nave, and north aisle, a tower and spire, and a south porch, the vane of the spire to rise 180 feet from the base course. A school has been already erected in the same style, and there is to be a parsonage and a house for the schoolmaster, also in the same style: estimated cost, schools, 1,000*l.*; church, 3,000*l.*; parsonage, 1,500*l.*; master's house, 300*l.* The whole are to be built of irregular coursed parpoints, and ashlar coigns. The contractor is Mr. Wade, contractor for part of the Huddersfield Railway.——The Doncaster New Market, erected by the corporation, was recently opened. It is a long, wide building, in the shape of the letter L, placed on the site of the old Town Hall, in the centre of the Magdalens. There are eight public entrances into it. Round the inside are fifty-five shops, and up the centre at one end thirty-nine stalls: the other end is used as a butter and poultry market. The whole is already let, and at present rents, upwards of 500*l.* annually will be realized.——Eldon Church, to be consecrated on 16th inst., will accommodate 800 persons. The font is of Roche Abbey stone, and the pulpit is moulded. A tower is much wanted, and the unfinished state of a street close by is an eyesore in the view of the whole.——Messrs. Wilson and Gibson, the contractors for the southern approaches of the High Level Bridge, at Newcastle, and for the new Durham Infirmary, and other buildings, have got the contract for the erection of the new Public Hall in the city of Durham, under Mr. Hardwick, architect.——Some workmen having been employed in taking down a portion of the screen in front of the Register-house, at Edinburgh, preparatory to the erection of the equestrian statue of the Duke of Wellington, an interdict was immediately obtained, on its being learnt that the Government had no intention to allow the whole screen to be thrown back as desired by the citizens.——The Marchioness of Waterford is building, at her own cost, a new church at Guilcoh, in the diocese of Waterford. The first stone has lately been laid. The inscription on it is,—"To the Glory of God. Laid May, 1849, by George Wilson, aged 106 years; erected by Louisa, Marchioness of Waterford."——On Tuesday, June the 5th, the chapel lately built in the hamlet of Frieth, in the parish of Hambleden, Bucks, was, with its burial-ground, consecrated by the Lord Bishop of Oxford. It is dedicated to St. John the Evangelist, and contains seats for 150 persons. Mr. J. P. Harrison is the architect. At the east and west ends are memorial windows of stained glass: the west window, in memory of the Rev. H. C. Ridley, is the work of Mr. Hudson, of Pentonville; the east window was executed by Mr. Hardman. The carpet for the chancel is a joint contribution from the labours of several ladies. The chapel is well placed on the slope of a hill, and is built of flint, with Bath and Caen stone dressings. The roof is of deal, the seats of cedar, the lectern of oak, and the altar-fence, pulpit, and prayer-desk of oak and cedar intermixed. The belfry is of oak, filled in with decorated work. The cost of the church and its fittings is about 1,200*l.* Mr. Bond, of Marlow, was the builder.

METALS.—Returns for 1848 show that 3,788 tons of pig and sheet lead were imported into the United Kingdom, together with 1,298 tons of lead ore, and 64 tons of white lead. Export of lead ore, 134 tons, of pig and rolled lead, 4,977 tons, white lead, 1,168 tons, red lead, 842 tons, and pig and sheet lead, 3,747 tons. Copper ore imported, 50,053 tons. Value of copper manufactures imported, 9,200*l.* Copper ore retained for domestic use, 51,307 tons; duty, 10,227*l.* net. British copper exported, 13,466 tons. Zinc or spelter imported, 13,529 tons, duty free. Zinc exported, 562 tons British, and 3,766 tons foreign.

SALISBURY CATHEDRAL.—It is reported in the neighbourhood, that the dean and chapter have it in contemplation to throw Salisbury Cathedral open to the public. We sincerely hope that the report in question is founded in truth.

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